

What is claimed is:

1. A hydrogel wound dressing formed by spray delivery of a liquid composition to the wound, wherein the composition forms a hydrogel *in situ* on the wound.
2. The wound dressing of claim 1, wherein the hydrogel is degradable.
3. The wound dressing of claim 1, wherein the composition is delivered via an aerosol delivery device.
4. The wound dressing of claim 1, wherein the composition is delivered via a pump spray delivery device.
5. The wound dressing of claim 1, wherein the composition comprises water soluble macromers having one or more crosslinkable groups that crosslink *in situ* to form a hydrogel.
6. The wound dressing of claim 1, wherein the composition includes a macromer or polymer that gels *in situ* in response to a gelling stimulus.
7. The composition of claim 1, wherein the composition comprises a polymer that precipitates to form a hydrogel upon application to the wound.
8. The wound dressing of claim 1, wherein the composition further contains one or more additives selected from the group consisting of preservatives, biologically active agents, defoamers, wettings agents, leveling agents, hydrating agents, thickeners, fillers, and absorbents.
9. The wound dressing of claim 8, wherein the active agent is selected from the group consisting of growth factors (*e.g.* platelet-derived growth factor, epidermal growth factor, transforming growth factor beta (TGF- β)), nitric oxide, antibiotics, anti-inflammatories, analgesics, blood coagulants, and enzymes.
10. The wound dressing of claim 8, wherein the active agent is one which delivers NO to the wound.
11. The wound dressing of claim 1, wherein the dressing debrides the wound when it is removed.

12. The wound dressing of claim 6, wherein the water soluble macromers having one or more crosslinkable groups are PVA macromers modified with pendant crosslinkable groups.

13. The wound dressing of claim 6, wherein the *in situ* crosslinking is in response to redox initiation.

14. A method of forming a hydrogel wound dressing, comprising the steps:

applying a composition to a wound via spray; and

bringing a gelling stimulus into contact with the composition, either before, during, or after application of the composition to the wound, causing formation of the hydrogel wound dressing.

15. The method of claim 14, wherein the hydrogel is degradable.

16. The method of claim 14, wherein the composition is delivered via an aerosol delivery device.

17. The method of claim 14, wherein the composition is delivered via a pump spray delivery device.

18. The method of claim 14, wherein the composition comprises water soluble macromers having one or more crosslinkable groups that crosslink *in situ* to form a hydrogel.

19. The method of claim 14, wherein the composition includes a macromer or polymer that gels *in situ* in response to a gelling stimulus.

20. The method of claim 14, wherein the composition comprises a polymer that precipitates to form a hydrogel upon application to the wound.

21. The method of claim 14, wherein the composition further contains one or more additives selected from the group consisting of preservatives, biologically active agents, defoamers, wettings agents, leveling agents, hydrating agents, thickeners, fillers, and absorbents.

22. The method of claim 21, wherein the active agent is selected from the group consisting of growth factors (*e.g.* platelet-derived growth factor, epidermal growth factor, transforming growth factor beta (TGF- β)), nitric oxide, antibiotics, anti-inflammatories, analgesics, blood coagulants, and enzymes.

23. The method of claim 21, wherein the active agent is one which delivers NO.

24. The method of claim 18, wherein the water soluble macromers having one or more crosslinkable groups are PVA macromers modified with pendant crosslinkable groups.

25. The method of claim 14, wherein the *in situ* polymerization is in response to redox initiation.

26. A composition for forming a hydrogel wound dressing comprising a macromer or polymer that gels *in situ* to form a hydrogel.

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